



Dasytidae of the Egadi Archipelago (Coleoptera, Cleroidea) with description of *Danacea hierena* n. sp.

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Abstract

Ten Dasytidae species have been found to be present in the Egadi islands, one of which—*Danacea hierena* n. sp.—is endemic of the whole Archipelago and is here described. Excluding the new species, no other endemic has been found and the Egadi Dasytidae fauna appears to be rather similar to the Sicilian one. *Dasytes croceipes* Kiesenwetter, 1866 is reported new for Sicily.

Key words: *Aplocnemus*, *Danacea*, *Dasytidius*, *Dasytes*, *Divales*, *Psilothrix*, Sicilian fauna, new species, new records

Introduction

The Egadi Archipelago, located at the western end of Sicily, opposite of the coast between Marsala and Trapani, includes three islands: Favignana (19 Km², max. elevation 309 m), Levanzo (10 Km², max. elevation 278 m) and Marettimo (12 Km², max. elevation 686 m). Favignana and Levanzo are rather close: less than 4 Km from each other, the former being about 8 Km, and the latter about 12 Km, from the Sicilian coast; Marettimo is further west, approximately 15 Km from Favignana and more than 30 Km from the Sicilian coast. The maximum depth of the sea between Sicily and Favignana (and Levanzo) is about 40 m, whereas between Marettimo and Favignana is approximately 140 m (Francini Corti & Lanza 1973, Lanza 1973, Massa 1995).

Literature dealing with flora and fauna of the Egadi Archipelago is rather abundant: particularly the Marettimo flora appears to be rather well known (see for example Gianguzzi *et al.* 2006). The Archipelago terrestrial fauna has been the subject of various contributions, several of which concerning Coleoptera: Cantharidae Malthininae (Svihla 2009), Carabidae (Magistretti 1970, Magrini *et al.* 2001), Cerambycidae (Hellrigl 1971), Chrysomelidae (Daccordi & Ruffo 1974), Curculionidae (Magnano & Osella 1973), Staphylinidae (Bordoni 1973), Tenebrionidae (Aliquò 1993, Canzoneri 1970, Marcuzzi 1970). The general conclusion is that the Egadi arthropods fauna is strictly related to the Sicilian one; Favignana and Levanzo have a rather reduced insular character (only a few endemics have been reported for these islands) whereas Marettimo, isolated from Sicily since a longer time, has a higher number of (supposedly) strict endemics; furthermore several among the wide distribution species found on Marettimo have never been collected both on the nearby two islands and on Sicily. The Egadi fauna, notwithstanding the attention received, still is far from being well known: several groups deserve investigation efforts and new endemic species are likely to be discovered in the future. It is particularly so for the Dasytidae: only two species were until now recorded for Marettimo and just one for Favignana and Levanzo (Liberti 1985, 1995b).

Materials and methods

This paper is based on approximately 1000 specimens collected by the authors, in the years 2006-2008, on the three Egadi islands: Favignana, Levanzo and Marettimo. The material is kept in the authors collections (abbreviated **CBCI** and **GLCI**); part of the type series of *Danacea hierena* **n. sp.** are kept in the following Museums:

MCGI Museo Civico di Storia Naturale "G. Doria", Genova;
MCMI Museo Civico di Storia Naturale, Milano;
MZMI Museo Zoologico "Cambria", Messina.

Microscopic mountings have been made in water soluble media, either PVP or DMHF, according to the procedure already described (Liberti 2005). Drawings were made with the aid of a 10x eyepiece grid mounted on a stereo-microscope.

Results

Danacea hierena **n. sp.**

(Figs: 1; 2A–E)

Type locality. Marettimo island, Trapani province, Sicily.

Types. Holotype ♂, MCGI, labelled "IT – TP: Marettimo, M. Falcone v. E, 400m, 37°58.4N 12°03.5E, 15.V.2008, leg. Liberti". 7 paratypes (6 ♂♂, 1 ♀: GLCI): "IT - TP: Favignana, M. S. Caterina, 150 m, 37°55.6N 12°18.9E, 12.V.2008, leg. Liberti". 11 paratypes (3 ♂♂: MCGI; 4 ♂♂, 4 ♀♀: GLCI): "IT - TP: Favignana, M. S. Caterina 250 m, 37°55.7N 12°18.8E, 12.V.2008, leg. Liberti". 63 paratypes (3 ♀♀: MCGI; 6 ♂♂, 3 ♀♀: MCMI; 42 ♂♂, 9 ♀♀: GLCI): "IT - TP: Favignana, M. S. Caterina, 310 m, 37°55.7N 12°18.7E, 12.V.2008, leg. Liberti". 2 paratypes (2 ♂♂: GLCI): "IT - TP: Favignana, Cala del Passo, 37°55.2N 12°18.3E, 13.V.2008, leg. Liberti". 2 paratypes (1 ♂: CBCI; 1 ♂: GLCI): "Sicilia, TP, Egadi, Isola di Levanzo, 23.IV.2007, leg. C. Baviera". 8 paratypes (4 ♂♂, 4 ♀♀: CBCI): "Sicilia, Trapani, Isole Egadi, Isola di Marettimo, 16-18.IV.2006, leg. C. Baviera". 98 paratypes (6 ♂♂, 3 ♀♀: MZMI; 64 ♂♂, 17 ♀♀: CBCI; 5 ♂♂, 3 ♀♀: GLCI): "Sicilia, TP, Egadi, Isola Marettimo, 18-23.IV.2007, leg. C. Baviera". 48 paratypes (3 ♂♂: MCGI; 37 ♂, 8 ♀♀: GLCI): "IT - TP, Marettimo, (presso il paese), 200m, 15.V.2008, leg. Liberti" [one further ♀: MCGI, with this same labelling, has been designed as the allotype (International Commission on Zoological Nomenclature 1999: 72A)]. 24 paratypes (15 ♂♂, 9 ♀♀: GLCI) same label data as the holotype.

Description. Male. Head (eyes included) as wide as, or slightly wider than, pronotum; forehead wide: distance between eyes more than three times the eyes width. Head length/width ratio approximately 1, looking at the insect head placed horizontally. Antennae rather short, slightly and gradually widened from base to apex; articles 3, 4, 5 narrow (but 5 variable); 6, 7, 8 shorter than 4, 5; 9, 10 approximately globular. Pronotum slightly wider than long (transverse), its maximum width in the middle, moderately narrowed forwards and backwards; anterior margin wider than posterior one; pronotum surface deeply punctured but smooth and bright between the punctures. Elytra parallel-sided; feebly bordered; jointly rounded at apex; apices slightly divergent; apical angle well defined, rectangular. Body covered with short, pale greenish to whitish, scale like setae (as in the other *Danacea*) which, in this species, are rather sparse; pronotal setae on disc nearly all parallel and directed forwards, on the anterior margin more or less converging towards a point in the middle. Elytra surface often "decorated" with one or two symmetrical spots, and/or a posterior transversal band, apparently bare (actually covered with hardly visible, sparse, pale brown setae). Integuments dark green, bright with metallic glare: dorsal surface resulting colour (hairs plus integuments) grey-green; labium and mandibles yellow; legs entirely yellow; antennae yellow with just the tip of 11th article darkened; palpi yellow with apical half of last article darkened. Median lobe as in Figures 2A, 2B, 2C. Internal sac very long, its basal part (namely the part visible inside the median lobe apical half) fitted with two weakly sclerified

lamellae (Figures 2C, 2D); its median part (which extends outside the median lobe base) showing a tiny granulation; apical orifice not clearly detectable. Spicular fork (Figure 2E) branches rather thin.



FIGURE 1. *Danacea hierena* n. sp.: *habitus* (Paratype ♂ of Favignana island, Santa Caterina Castle). The elytra of this specimen are decorated (see text): an apparently bare (free of setae) posterior band can be easily seen (total length of the specimen: 3.3 mm).

Female. Similar to male but eyes more flattened; elytra clearly widened in apical half and “decorated” more frequently than in males.

Dimensions in mm:

	Males		Females	
	average	conf. limits (+ –)	average	conf. limits (+ –)
Total Length	3.40	0.42	3.86	0.15
Pronotum Length	0.63	0.09	0.69	0.07
Elytra Length	2.18	0.25	2.61	0.07
Pronotum Width	0.73	0.14	0.80	0.04
Elytra Width	1.09	0.16	1.47	0.07
number of specimens	5		5	
probability level	95%		95%	

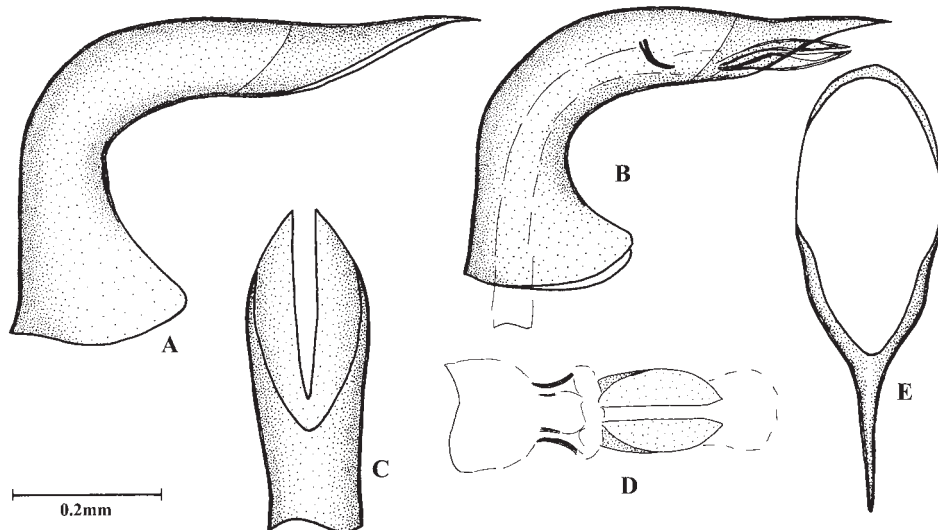


FIGURE 2. *Danacea hierena* n. sp. A, B: Median lobes in side view. C: Median lobe in ventral view (from below). D: Internal sac basal part in ventral view (this part is located inside the median lobe apical part, as in B). E: Spicular fork. Sources of the drawings: A, C, D, E: Paratype of Levanzo island; B: Paratype of Marettimo island.

Differential diagnosis. *Danacea hierena* n. sp. belongs to the first group *Danacea* (*Danacea*) (Schilsky 1897, Liberti 1989) which includes the species where the discal scale-like setae on pronotum are all parallel and directed forward. It is very similar to *Danacea trinacriae* Liberti, 1979 and *Danacea zingara* Liberti & Baviera, 2004. These two species, widespread and sometimes common or very common in the Trapani province, are absent from the Egadi Archipelago: their ranges do not overlap with that of *D. hierena*. The main differences are summarized in the table below (the colour characters of palpi and antennae often being rather variable).

	<i>D. hierena</i> n. sp.	<i>D. trinacriae</i> Liberti	<i>D. zingara</i> Liberti & Baviera
Median lobe	As in Figs 2A, 2B, 2C. Median lobe apical part longer, bent ventrally.	As in Liberti & Baviera (2004: Fig 8). Median lobe apical part shorter, weakly bent dorsally.	As in Liberti & Baviera (2004: Figs 1–3). Median lobe apical part shorter, bent dorsally.
Internal sac	As in Figs 2C, 2D. Lamellae weakly sclerified, wide, rather short.	As in Liberti & Baviera (2004: Fig 8). Lamellae sclerified, thin, rather short.	As in Liberti & Baviera (2004: Figs 1–3). Lamellae sclerified, wide, rather long, nearly tubular.
Antennae	Articles 6, 7 and 8 similar to each other and slightly shorter than 5.	Articles 6 and 8 usually smaller than 5 and 7.	Articles 5 to 8 similar to each other.
Antennae	Entirely yellow, only the tip of last article darkened.	At least the last article completely dark.	At least the last article completely dark.
Palpi	Yellow, only the apical half of last article darkened.	Entirely reddish to brown.	At least the last article brown.

The quotations of *D. trinacriae* for Marettimo and Levanzo Islands, reported in Liberti & Baviera (2004), must be referred to *D. hierena* n. sp.

Etymology. The name derives from Hiera, an ancient name of Marettimo.

Ecology. The adults of this species have been collected in April and May on several kinds of flowers, where they feed on pollen: on Favignana mostly on umbelliferous flowers (*Magydaris* sp.); on Marettimo on the abundant blossoming *Euphorbia* bushes.

***Danacea (s. str.) nigripalpis* Fiori, 1912**

Liberti, 1989: 292; Liberti & Schembri 2002: 179; Liberti & Baviera 2004: 152.

Collection localities. Favignana: Monte Santa Caterina 150 m (37°55.6N 12°18.9E), 12 may 2008 (GLCI); Monte Santa Caterina 250 m (37°55.7N 12°18.8E), 12 may 2008 (GLCI); Cala del Passo (37°55.2N 12°18.3E), 12-13 may 2008 (GLCI); Levanzo: Pizzo del Monaco (38°00.3N 12°19.8E) 140 m, 14 may 2008 (GLCI); near the “Faraglione” (37°59.2N 12°19.8E), 14 may 2008 (GLCI).

Collection data. Very abundant, at all locations, on the available flowers (e.g. *Anthemis*, *Chrysanthemum*, *Galactites*, several umbelliferous species).

Distribution. The range of this species includes Sicily and Malta Archipelago, where it appears to be very common in May and June.

***Danacea (Allodanacaea) sicana* Liberti, 1985**

Liberti 1985: 345; Liberti & Baviera 2004: 154.

Collection locality. Marettimo: above the village at 200 m, 15 may 2008 (8 specimens) (GLCI).

Collection data. Collected by sweeping.

Distribution. An endemic of Western Sicily, often sporadic but sometimes very common (Trapani province). Already known of Marettimo Island (Liberti & Baviera 2004).

***Dasytes nigroaeneus* Küster, 1850**

Liberti 1995a: 500; Liberti 2004: 318.

Collection localities. Favignana: Monte Santa Caterina 150 m (37°55.6N 12°18.9E), 12 may 2008; Monte Santa Caterina 250 m (37°55.7N 12°18.8E), 12 may 2008; Monte Santa Caterina 310 m (37°55.7N 12°18.7E), 12 may 2008 (GLCI); Cala del Passo (37°55.2N 12°18.3E), 12-13 may 2008 (GLCI); Favignana island, 19 apr. 2007 (CBCI). Levanzo: Levanzo island, 23 apr. 2007 Baviera; Pizzo del Monaco (38°00.3N 12°19.8E) 140 m, 14 may 2008 (GLCI); near the “Faraglione” (37°59.2N 12°19.8E), 14 may 2008 (GLCI); Marettimo: near the Village at 200 m, 15 may 2008 (GLCI); Mount Falcone east slope at 400 m (37°58.4N 12°03.5E), 15 may 2008 (GLCI); Marettimo island, 18-23 apr. 2007 (CBCI).

Collection data. Abundant on flowers (e. g. *Teucrium fruticans*, *Galactites tomentosa*) at all locations.

Distribution. A Mediterranean species, its distribution ranges from the Black Sea to Portugal.

***Dasytes croceipes* Kiesenwetter, 1866**

Liberti 2004: 316.

Collection localities. Favignana: Favignana island, 19 apr. 2007 (7 ♀♀) (CBCI); Monte Santa Caterina 310 m (37°55.7N 12°18.7E), 12 may 2008 (1 ♂, 3 ♀♀) (GLCI); Cala del Passo (37°55.2N 12°18.3E), 12-13 may 2008 (4 ♀♀) (GLCI).

Collection data. Collected by sweeping and on *Magydaris pastinacea* flowers.

Distribution. A West Mediterranean species, living in Algeria, Morocco, Spain, Southern France, Sardinia and Corsica. Marginally present on continental Italy in Western Liguria (Imperia province) only.
New for Sicily.

***Psilothrix viridicoerulea* (Geoffroy, 1785)**

Pic 1937: 110 [*Lasius viridicoeruleus*]; Allenspach & Wittmer 1979: 110; Liberti 1988: 12; Liberti & Schembri 2002: 183.

Collection localities. Favignana: Favignana island, 19 apr. 2007 (1 ♂) (CBCI); Cala del Passo (37°55.2N 12°18.3E), 12-13 may 2008 (3 ♀♀) (GLCI).

Collection data. Collected by sweeping.

Distribution. This species has a wide European, Mediterranean and Macaronesian distribution. In Northern Europe it can only be found close to the sea side. Common all over its range.

***Psilothrix aureola* Kiesenwetter, 1859**

Pic 1937: 108 [*Lasius aureolus*]; Liberti 1995a: 501; Liberti & Schembri 2002: 181.

Collection localities. Favignana: Favignana island, 19 apr. 2007 Baviera; Monte Santa Caterina 150 m (37°55.6N 12°18.9E), 12 may 2008 (GLCI); Monte Santa Caterina 250 m (37°55.7N 12°18.8E), 12 may 2008 (GLCI); Cala del Passo (37°55.2N 12°18.3E), 12-13 may 2008 (GLCI). Levanzo: Levanzo island, 23 apr. 2007 (CBCI); Pizzo del Monaco (38°00.3N 12°19.8E) 140 m, 14 may 2008 (GLCI); near the “Faraglione” (37°59.2N 12°19.8E), 14 may 2008 Liberti. Marettimo: Marettimo island, 18-23 apr. 2007 (CBCI).

Collection data. Collected by sweeping, sporadic to common.

Distribution. A Central Mediterranean species: the distribution includes Corsica, the Balearic Islands, the whole of Peninsular Italy, Sicily, Algeria, Tunisia. Common all over its range.

***Divales cinctus* (Gené, 1839)**

Majer 1984: 287.

Collection localities. Marettimo: near the Village at 200 m, 15 may 2008 (common) (GLCI); Mount Falcone east slope at 400 m (37°58.4N 12°03.5E), 15 may 2008 (sporadic) (GLCI).

Collection data. Collected by sweeping.

Distribution. A Tyrrhenian species: Peninsular Italy (from Liguria to Calabria), Tuscan Archipelago, Corsica, Sardinia, Sicily. Common to very common.

***Dasytidius ragusae* (Procházka, 1895)**

Majer 1990: 50 [*Dasytidius ragusai*]; Liberti 1995a: 500.

Collection locality. Favignana: Cala del Passo (37°55.2N 12°18.3E), 12-13 may 2008 (GLCI).

Collection data. Rare, but several specimens found just on one blossoming *Centaurea* sp.

Distribution. A Central Mediterranean species whose range includes Tunisia (common), Algeria, Libya, Lampedusa and the west of Sicily.

***Aplocnemus pectinatus* (Küster, 1849)**

Liberti 1995a: 501. Liberti 1995b: 177; Liberti & Schembri 2002: 183; Constantin 2005: 228, Constantin 2007: 161.

Collection localities. Favignana: Monte Santa Caterina 150 m (37°55.6N 12°18.9E), 12 may 2008 (GLCI); Monte Santa Caterina 250 m (37°55.7N 12°18.8E), 12 may 2008 (GLCI); Monte Santa Caterina 310 m (37°55.7N 12°18.7E), 12 may 2008 (GLCI); Cala del Passo (37°55.2N 12°18.3E), 12-13 may 2008 (GLCI); Favignana island, 19 apr. 2007 (CBCI); Levanzo: Pizzo del Monaco (38°00.3N 12°19.8E) 140 m, 14 may 2008 (GLCI); Levanzo island, 23 apr. 2007 (CBCI); Marettimo: near the Village at 200 m, 15 may 2008 (GLCI); Mount Falcone east slope at 400 m (37°58.4N 12°03.5E), 15 may 2008 (GLCI).

Collection data. Very common, on several flowers, on Favignana and Levanzo, uncommon on Marettimo.

Distribution. A Central Mediterranean species present in the Balearic Islands (marginally), Corsica, Sardinia, Sicily, Malta, Southern Italy (marginally), Tunisia, Algeria. Already reported for Favignana, Levanzo and Marettimo (Liberti 1995b).

Conclusions

Ten Dasytidae species, all winged, are here reported of the Egadi Archipelago. Taking into account that 37 species of this family are known of Sicily (Liberti, unpublished data), and given the small size of the Egadi Islands, this number should not be considered small. As a rough comparison, nine Dasytidae species have been found on the Malta Archipelago (Liberti & Schembri, 2002) whose surface is in excess of 300 Km². It should also be taken into account that, as usual, collection may be incomplete: for instance at least one “expected” species (*Dasytes flavescens* Gené) has not been found. Furthermore, Marettimo has not been sufficiently prospected and the finding of more species there is likely.

Favignana appears to be the richest, with eight species, Marettimo is intermediate, with six, and Levanzo is the poorest, with five species, all of them also present at Favignana.

The table here below sums up the results:

Species	Favignana	Levanzo	Marettimo	Sicily
<i>Danacea hierena</i> n. sp.	XX	X	XXX	
<i>Danacea nigripalpis</i> Fiori	XXX	XXX		XXX
<i>D. (Allodanaceae) sicana</i> Liberti			X	XX (in the west)
<i>Dasytes nigroaeneus</i> Küster	XXX	XXX	X	XX
<i>Dasytes croceipes</i> Kiesenwetter	X			
<i>Psilothrix viridicoerulea</i> Geoffroy	X			XXX
<i>Psilothrix aureola</i> Kiesenwetter	XXX	XXX	XX	XXX
<i>Divales cinctus</i> Gené			X	XXX
<i>Dasytidius ragusae</i> Prochazka	X			X (in the west)
<i>Aplocnemus pectinatus</i> Küster	XXX	XXX	X	XXX

XXX = very common everywhere, XX = sporadic but locally abundant, X = only a few specimens collected locally.

From these data Marettimo might appear, to some extent, different from Favignana (and Levanzo): two species, *Allodanaceae sicana* and *Divales cinctus*, have been found just on Marettimo while four species (*Danacea nigripalpis*, *Dasytidius ragusae*, *Dasytes croceipes* and *Psilothrix viridicoerulea*) have been found just on Favignana (or on Favignana and Levanzo). However none of these species can be considered as particularly meaningful: *Allodanaceae sicana* and *Dasytidius ragusae* can both be found near Trapani; *Danacea nigripalpis*, *Divales cinctus* and *Psilothrix viridicoerulea* are very common all over Sicily and *Dasytes croceipes*, although being found on Favignana only, has a wide Western Mediterranean range. For these same reasons, the agreement between decreasing surfaces of the islands and decreasing number of species may not be particularly meaningful (however, on this subject, see also Daccordi & Ruffo 1974). On

the other hand, it is certainly meaningful that *Danacea hierena*, endemic of the Archipelago, has been actually found on all the three Islands. It can be added that several Dasytidae species may not, apparently, be affected by (pesticides free) agriculture and can often be found in abandoned fields and on disturbed ground. The farming activity on Favignana is, and has been in the past, far higher than on the other two islands: here the Mediterranean bush has been nearly wiped out while, at Marettimo, it still covers a large amount of the ground (Gianguzzi *et al.*, 2006). In conclusion, the Dasytidae fauna of the Egadi Archipelago seems to be rather uniform and the differences observed between the three Islands may be due either to ecological dissimilarities or to lack of collection, rather than to a different geological and isolation history.

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